4-26-2021

Doctoral Capstone Experience in Academia – Brenau University

Amanda Watkins
Nova Southeastern University, aw1685@mynsu.nova.edu

Doctoral Capstone Experience in Academia – Brenau University

Amanda Watkins

OTD 8494: Doctoral Residency

Dr. Christina Kane

April 11, 2021

Abstract

The final requirement for degree conferral in Nova Southeastern University's Doctor of Occupational Therapy Program is a 16-week doctoral capstone experience to enhance skills beyond those of an entry-level occupational therapist. During the doctoral capstone experience, students are required to complete a final culminating project that is unique to their chosen focus area which includes the development, implementation, evaluation, and dissemination of their work. The focus area that I chose was academia in an occupational therapy program. I was given the opportunity to work with Brenau University's Entry-level Doctor of Occupational Therapy (ELOTD) program in Norcross, Georgia. I was under the supervision of one of the associate professors, Dr. Helene Smith-Gabai, PhD, OTR/L, BCPR. Together we identified the current needs and created learning goals and objectives that I would complete during my doctoral capstone experience related to the Neuroscience Implications for Performance Skills course and creating a virtual learning toolkit for faculty members as a future reference.

Keywords: academia, doctoral capstone experience, classroom assessment techniques, blended learning, virtual learning

Doctoral Capstone Experience in Academia – Brenau University

The Entry-level Doctor of Occupational Therapy (ELOTD) program at Brenau University is relatively new, and I was able to work with the first cohort of students who were completing their second semester. During my time at Brenau, I assisted my mentor with the course OT 839 PE: Neuroscience Implications for Performance Skills. My mentor had previously taught this course for several semesters to the Master of Science (MSOT) cohorts at the Gainesville, Georgia campus. Due to differences between the course offerings for the ELOTD versus the MSOT cohorts, I assisted my mentor with changing and adding some course material for the Spring 2021 semester. This included creating a final case study assignment along with the grading rubric for the assignment.

Another component to my doctoral capstone experience was the creation of a virtual learning toolkit. Due to the new design of this program, there is a need for the inclusion of virtual learning components in addition to the on-ground class style. As this program has incorporated more online learning components in their courses, the demands for the faculty to have knowledge of virtual and blended learning strategies have increased. I evaluated and tested different resources that could be utilized for the courses taught in the ELOTD program. This project is a beneficial resource for Brenau's ELOTD Program because it includes references to support a blended learning approach. By integrating a blended learning approach into this program, the students' can further develop their clinical skills outside of the classroom.

Literature Review

Education and learning are essential components in the process and overall trajectory for training future occupational therapists. A key factor within education and learning is the

development of cognitive and pragmatic skills. Cognitive and pragmatic skills are skills that occupational therapy students use to continually seek new and additional information by utilizing various technologies to assist in their learning process (Mitcham, 2014). These skills are useful within a variety of classroom strategies but are primarily advantageous for the flipped classroom strategy. In the flipped classroom strategy, the educator's role is a facilitator and course instruction are delivered using a mixture of different technologies (Tattersall, 2015). In an article written by Harris and Bacon (2019), education literature was reviewed about the use of different classroom strategies and it was determined that the flipped classroom strategy enhanced student's active learning.

In order to provide effective learning opportunities for occupational therapy students, faculty members should be familiar with classroom strategies and teaching methods to support active learning environments. When designing coursework and creating learning objectives, faculty should direct their focus to facilitating student engagement and how the course content can enhance each student's ability to learn (Piza et al., 2019). Models and frameworks are useful tools for educators to structure their course materials and obtain positive student outcomes. The Four-Quadrant Model of Facilitated Learning (4QM) is where the professor acts as a facilitator throughout the four quadrants of: task specification, decision making, key points and autonomy (Greber et al., 2011). This model fits appropriately within the flipped classroom strategy so that concepts can be reinforced while simultaneously promoting the students' ability to recall and integrate the information into their clinical skills (Herrman, 2020).

As universities continue to integrate the use of technology for instruction and assignments into their courses, the need for creating a versatile blended learning environment also increases. Blended learning is the combination of on ground and online instruction to

enhance learning and optimize efficiency for professors (Garrison, 2007). Garrison (2007) noted that by using the blended learning approach, students' independent learning, collaborative learning and self-paced learning was enhanced and communication between students and professors increased. Universities could incorporate blended learning by using their existing learning management systems (LMS) in combination with other virtual learning tools. Instructors can plan their course objectives for blended learning using the Bloom's taxonomy matrix. Within the Bloom's taxonomy matrix, instructors can organize course topics and materials to ensure student engagement and competency with concepts (Spence, 2019).

Angelo and Cross (1993) stated, "teaching without learning is just talking" and this is an important statement to remember when creating a learning environment, preparing materials, and engaging with students. The authors provide a battery of classroom assessment techniques, which are tools to measure student learning, for faculty to efficiently promote and empower their students' clinical skills (Angelo & Cross, 1993). Classroom assessment techniques allow faculty to create a symbiotic relationship between course materials and the cultivation of students into professionals (Adams & Hale, 2020). There are noteworthy educational resources available for faculty, however there should be a thoughtful and evidence-based decision made when integrating these materials into their courses. Unfortunately, there is not a significant amount of education literature in regard to the field of occupational therapy, but there is a variety of research that has been conducted by other allied healthcare disciplines that is beneficial for educators.

Needs Assessment

Prior to creating my learning goals and objectives for my doctoral capstone experience, an informal needs assessment was completed. I had the opportunity to work with my mentor, Dr.

Smith-Gabai, and we were able to identify how I could be of most assistance within her neuroscience course. Although my mentor has been teaching the neuroscience course in Brenau University's Occupational Therapy Department, this was the first time that she has taught this course in a new format for the first cohort of the entry-level doctoral (ELOTD) students. We collaboratively identified several gaps within the course where I could assist. These gaps included course content and the creation of the final case study assignment along with the rubric, assisting with activities during lab time, and providing information related to LSVT BIG certification and making the association between the course content and clinical practice.

The creation of the assignment and grading rubric were necessary because this was the first time that this course had been taught in the ELOTD program. I was provided with information that a case study assignment needed to be present within this course, but I had to research and brainstorm the actual design of the assignment. My mentor and I collaboratively compiled different ideas, and I had the idea of creating real-life case scenarios based on five famous individuals with different neurological conditions. I further met the need of this assignment by incorporating factors from the Occupational Therapy Practice Framework: Domain and Process Fourth Edition.

This course was taught to the first cohort of the ELOTD program and was modified from the structure of the same course that the Master of Science (MSOT) students take. This course was taught using a flipped classroom strategy so that the lab time could be maximized and reserved for hands-on application of the material that students were provided before the lab. The flipped classroom strategy that was used in this course was the lecture portion and content delivery was completed by recorded PowerPoint presentations and through readings completed prior to classes. The lab time was reserved for demonstration of skills and hands-on activities.

Because of this new, flipped classroom strategy, and my personal background of a blended learning program, I was asked to give insight and find evidence-based virtual learning resources for the faculty of the ELOTD program. These resources could then be integrated for the information delivery outside of class. My mentor and I decided that a virtual learning toolkit would be beneficial for the faculty's future reference.

Goals & Objectives

I created three learning goals with three corresponding objectives for each goal that were completed during my doctoral capstone experience. These learning goals and objectives were created prior to the start of my doctoral capstone experience in coordination with my mentor. Collectively, we decided the most useful tasks that I could complete to meet the current needs of the course and for the first cohort of the Entry-level Doctor of Occupational Therapy Program at Brenau as well as future cohorts who will take this course. We also identified a sustainable project that I completed to serve as a resource for all faculty members in the department.

My first learning goal that I created was, "By the end of the Spring 2021 semester at Brenau University, I will understand professional occupational therapy faculty roles in academia." The corresponding objectives that I created to achieve my first long-term learning goal were to foster improved professionalism and building of rapport when communicating with professors and students at Brenau, demonstrate understanding of team and individual faculty roles and to demonstrate understanding of faculty roles pre-semester, intra-semester, and post-semester. I achieved the first learning goal and all objectives by assisting with various tasks to prepare for and carryout class time activities. At the beginning of the doctoral capstone experience these tasks were to review the neuroscience materials that were going to be used in class time throughout the semester. Review of material continued throughout the semester so that

I was adequately prepared for class meeting times and was able to answer any questions from the students that were asked. This preparation was a critical pre-semester, intra-semester, and general faculty role that I noted.

I also experienced helping to facilitate lab class time by taking specific topics that I taught to students in smaller groups to meet the needs of my mentor and time constraints of this course. My roles included, review and instruction of laboratory models, assessment and screening protocols, evidence-based neurological intervention techniques and direct instruction of neuroscience concepts taught in an interactive presentation format. By completing these tasks of providing instruction through presentations, I was able to trial various software applications that I implemented into my virtual learning toolkit for the faculty. I also assisted by being a proctor for the lab practical at the Gainesville and Norcross campuses for the ELTOD and MSOT cohorts.

My second learning goal that I created was, "'I will create an ELOTD level neuroscience course assignment and grading rubric by week 3 to be posted on the course syllabus and course Canvas shell." The corresponding objectives that I created to achieve my second long-term learning goal were to review neuroscience materials and concepts to gain basis of knowledge for assignment creation, research interesting and applicable case study examples to include in assignment and review relevant APA guidelines to include in assignment instructions and grading rubric. I completed this goal and all objectives within the first three weeks, as stated in the long-term goal itself. In collaboration with my mentor, I decided to build this case study assignment based off of four famous individuals with different neurological diagnoses. The intention behind this assignment was to have the students answer and include a series of questions based off of material that had been presented throughout the semester and through their

course readings. I also created a second portion to this assignment that included a disease chart that could be a reference tool for their future clinical placements and practice.

My third and final learning goal that I created was, “By the end of my doctoral capstone experience, I will develop a virtual learning resource tool kit for Brenau University’s Occupational Therapy Department faculty members to incorporate virtual learning strategies for future courses.” The corresponding objectives that I created to achieve my third long-term learning goal were to research different frameworks and models for asynchronous instruction and learning, research different digital applications for use with asynchronous and synchronous instruction and learning, research various instruction delivery methods and how they impact students with different learning styles. I achieved this goal and learning objectives by firstly creating a comprehensive outline of what should be included in the final toolkit and receiving feedback from several faculty members on the topics.

Once I solidified the topics and discussed different options with my mentor and several other faculty members, I began adding the information in an organized manner. Within my first learning goal and experiences of being in an instructor role, I incorporated all of the items that I included in the final product of my virtual learning toolkit. The topics that are within the virtual learning toolkit are an introduction of how to use the toolkit, community of inquiry framework and blended learning approaches, classroom assessment techniques, using YouTube for assignments, and free web resources. I gave application examples in this toolkit and gave insight of how I used these resources during my time at Brenau.

The purpose of my culminating project was to develop my skills as an occupational therapist in an academic setting. Throughout the project I was able to learn the intricacies of being a faculty member in an occupational therapy program and gain understanding of different

academic processes. This experience allowed me the opportunity to take my lived experience as an ELOTD student from a different program format and apply my skills to this course at Brenau. In addition to prior lived experience, I was able to further enhance my knowledge of learning technologies, classroom assessments and teaching methods to promote student engagement and formation of occupational therapy clinical skills.

Summary

During my doctoral capstone experience, I completed the original learning goals and objectives that I had set from the beginning. In addition to these learning goals and objectives, I had many other opportunities to enhance my skills in the academic setting and further assist my mentor with teaching the neuroscience course. I was able to follow a concise timeline and achieve all goals in a timely manner. The entire culmination of this doctoral capstone experience, I had frequent communication and collaboration with my mentor. This served as a great opportunity to enhance my skills in this role, but also gave her ideas for the other courses that she teaches.

In my first learning goal, I was able to complete a wide variety of tasks to help facilitate class time and preparation for the classes that we conducted. During the first in-person class, I had the opportunity to teach somatosensory screening protocols and I made a procedures grid for the students, see Appendix A. I used this grid so that the students could follow along when I did the demonstration of the techniques and so that they could add their own notes as we progressed through each section. I received positive feedback from my mentor and the students after creating this resource for them. Another task that I completed for this learning goal was to create study material for each exam. To do this, I decided to use Quizlet, because of the different study

features that could be used. I created two Quizlet study sets for Exam 1 and Exam 2. See an excerpt of Quizlet study sets in Appendix B.

For the presentation components to achieve my first learning goal, I covered material on related concepts for the course. These concepts included the LSVT BIG treatment protocol, the brachial plexus, lumbar plexus, sacral plexus, peripheral and autonomic nervous systems, the Quick Neurological Screening Test, cerebral cortex, limbic system, memory, and different cognitive assessments. I created PowerPoint presentations for these topics and incorporated demonstration of assessment materials. During my presentations, I was able to include and test the efficacy of all the components that I included in my virtual learning toolkit. By testing each component, I was able to reference my experience with each area and describe how these components influence students' learning. Please see Appendix C for an excerpt of these presentations.

For my second learning goal related to the course assignment and rubric that I created, see Appendix D. My mentor and I decided that there should be multiple individuals listed for the students to complete their case study about. We decided to include case study topics on multiple sclerosis, complex regional pain syndrome, stroke, traumatic brain injury and Parkinson's disease. Along with each case study topic, we had the students complete their paper on a famous individual who had that corresponding diagnosis, Selma Blair, Paula Abdul, Kirk Douglas, Bobby Allison, and Michael J. Fox. In addition to the paper component of this assignment, I created a disease matrix for each condition that was used to condense the information from their paper and can be used a resource for the students on fieldwork or in future practice. Once the students submit their projects, we took the best disease matrix and posted it for all the students to

save. By doing this, the students would then have a complete disease matrix for the five different conditions as a reference.

In my third learning goal, I created a sustainable virtual learning toolkit for the faculty in the Occupational Therapy Department at Brenau University. I included resources that I implemented in my presentations during my doctoral capstone experience. In the toolkit, I referenced my experience with each tool and included examples of how each topic could be integrated into the other courses. This toolkit included easily accessible programs that were cost-free options and I ensured that the references could be accessed through the Brenau University Library system as well as the Community of Inquiry Framework as a basis for a blended learning approach. I made a printed copy and downloaded this toolkit to a flash drive for easy access for faculty members. See Appendix E for this virtual learning toolkit.

References

Adams, D., & Hale, E. (2020, August 26). *Stop giving them answers: make them think*. Faculty Focus. https://www.facultyfocus.com/articles/effective-teaching-strategies/stop-giving-them-answers-make-them-think/

Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). Jossey-Bass.

Garrison, D. R. (2007, October). *Strategic conversations about blended learning: Transforming higher education*. [Conference session]. COHERE/CHERD Conference, York University, Toronto, Canada. http://cde.athabascau.ca/coi_site/presentations/COHERE_CHERD_BL_Conference2.pdf

Greber, C., Ziviani, J., & Rodger, S. (2011). Clinical utility of the four-quadrant model of facilitated learning: Perspectives of experienced occupational therapists. *Australian Occupational Therapy Journal*, *58*(3), 187–194. https://doi-org.ezproxylocal.library.nova.edu/10.1111/j.1440-1630.2010.00901.x

Harris, N., & Bacon, C. E. W. (2019). Developing cognitive skills through active learning: A systematic review of health care professions. *Athletic Training Education Journal*,*14*(2), 135–148. https://doi-org.ezproxylocal.library.nova.edu/10.4085/1402135

Herrman, J. W. (2020). Creative Strategies for the Flipped Classroom. In J. W. Herrman (Ed.), *Creative Teaching Strategies for the Nurse Educator* (3rd ed., pp. 373-376). F.A. Davis Company.

Mitcham, M. D. (2014), Education as Engine. *American Journal of Occupational Therapy*, *68*(6), 636–648. https://doi.org/10.5014/ajot.2014.686001

Piza, F., Kesselheim, J. C., Perzhinsky, J., Drowos, J., Gillis, R., Moscovici, K., Danciu, T. E., Kosowska, A., & Gooding, H. (2019). Awareness and usage of evidence-based learning strategies among health professions students and faculty. *Medical Teacher*, *41*(12), 1411–1418. https://doi-org.ezproxylocal.library.nova.edu/10.1080/0142159X.2019.1645950

Spence, B. (2019). Using bloom's taxonomy matrix to reach higher-level learning objectives. *Radiologic Technology*, *90*(6), 622–624.

Tattersall, P. J. (2015). Flipped classroom: Benefits versus challenges for communicative sciences and disorders faculty and students. *Perspectives on Issues in Higher Education*, *18*(1), 4–15. https://doi-org.ezproxylocal.library.nova.edu/10.1044/ihe18.1.4

Appendix A

Somatosensory Screening

Type of Discriminative Sensation	Test	Purpose	Procedure	Pathways and Receptors
Touch	Light Touch	• Tests primary sensation • Client will be able to indicate/perceive (exteroception) when the stimulus is present	1. With client's eyes closed, client is instructed to say "yes" when they feel being touched and point to the location, or have them tell you where they felt it 2. Lightly touch the pad of the client's fingers or hands with your fingertip or a piece of cotton (anything soft)	**P:** DCML - Fasciculus Cuneatus **R:** Merkel's Discs
	Touch - Monofilaments	• Tests primary sensation • Tests client's tactile threshold • Client will be able to indicate/perceive (exteroception) when the stimulus is present	1. With client's eyes closed, client is instructed to say "yes" when they feel the monofilament 2. Apply monofilament perpendicular to the skin	**P:** DCML - Fasciculus Cuneatus **R:** Merkel's Discs

		• **<u>Typical Mini Kit (5 Monofilaments):</u>** ○ Green (2.83) – normal light touch & deep pressure ○ Blue (3.61) – diminished light touch ○ Purple (4.31) – diminished protective sensation ○ Red (4.56 and 6.65) – loss of protective sensation ○ Untestable (6.65+) – inability to feel the largest monofilament	3. Press until monofilament forms "C-shape" – for thicker monofilament press until the skin blanches 4. Hold for 1-1.5 seconds and lift monofilament off without scraping across the skin 5. If answers are accurate – proximal location of touch is intact. If distal touch location is impaired – test dermatomes.	
	Deep Pressure	• Tests client's ability to perceive deeper touch stimuli	1. Tell client that you are going to firmly touch various parts of their arms (or other body part) with a pencil eraser 2. When the client's eyes are closed, firmly touch their skin with the eraser end of a pencil 3. Vary the time between stimuli to avoid developing a rhythmic pattern	**P:** DCML - Fasciculus Cuneatus **R:** Pacinian corpuscles

			4. Client indicates when they feel the touch	
	Static Two-point Discrimination	• Tests cortical sensation • Tests for receptor density & discriminatory touch	1. Tell client that you will touch them with the instrument using either one or two points, and to tell you when they feel the touch 2. Client responses should be "one", "two" or "I don't know" 3. Test the tip of each finger and provide the stimulus by applying light and equal pressure across the two points 4. Start with a distance of 5 mm and begin randomly testing one or two points 5. Only test on the radial and ulnar aspects of each finger and parallel to the longitudinal axis of each finger 6. Perform 10 trials	**P:** DCML - Fasciculus Cuneatus **R:** Meissner's Corpuscles
		• When the client responds accurately to 7 of 10 applications – notate the distance between the points of the Disk-Criminator tool • **<u>Norms:</u>** ○ 1-5 mm: normal ○ 6-10 mm: Fair ○ 11-15 mm: Poor ○ 1 point perceived: Protective sensation only ○ No points perceived: anesthetic area		

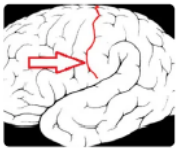
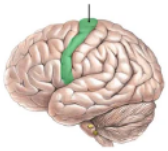
	Moving Two-point Discrimination	• Tests cortical sensation • Tests for receptor density • When the client responds accurately to 7 of 10 applications – notate the distance between the points of the Disk-Criminator tool • **<u>Norms:</u>** ○ 2-4 mm (Ages 4-60): normal ○ 4-6 mm (Ages 60+): normal	1. Tell client that you will touch them with the instrument using either one or two points, and to tell you when they feel the touch 2. Client responses should be "one", "two" or "I don't know" 3. Start with a distance of 8 mm and begin randomly testing one or two points 4. Move proximal to distal on the distal phalanx parallel to the longitudinal axis of each finger 5. Decrease the distance if client responds accurately 6. Accurate response to 7 of 10 trials	**P:** DCML - Fasciculus Cuneatus **R:** Meissner's Corpuscles
	Bilateral Simultaneous Touch	• Tests cortical sensation • Tests for sensory extinction – Can client attend to stimuli on both sides of body simultaneously	1. Tell client to say "left" when the left side is touched, "right" when the right side is touched, and "both" when both sides are touched 2. Lightly touch one limb, the opposite limb or both limbs simultaneously	**P:** DCML - Fasciculus Cuneatus **R:** Merkel's Discs

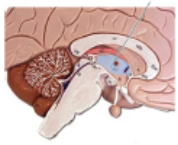
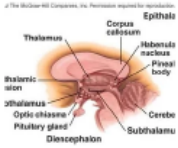
	Vibration	• Client will be able to indicate when a vibratory stimulus is being applied and when it is stopped • Tests Aβ peripheral nerve fibers	1. Use a tuning fork (128 Hz. Frequency) Ask client to tell you if they feel the tuning fork vibrating or not 2. Randomly apply a vibrating or nonvibrating tuning fork to a bony prominence 3. Test distal IP joints of fingers *If finger sense is impaired – test wrists, elbows, clavicles.	**P:** DCML - Fasciculus Cuneatus **R:** Meissner's Corpuscles
Proprioception	Conscious Proprioception/Kinesthesia	• Tests primary sensation • Tests awareness of the movements and relative position of body parts in space • Indicate dysfunction in peripheral nerves, SC, brainstem, or cerebrum	**<u>Joint Movement:</u>** 1. Ask client to tell you whether you are bending or straightening their joint 2. Firmly hold the sides of the joint and passively flex or extend the joint ~10° 3. Make sure to randomize the order of movements **<u>Joint Position:</u>** 1. Tell the client that you are going to move a joint and that after you have	**P:** DCML - Fasciculus Cuneatus **R:** Ruffini Corpuscles; GTO

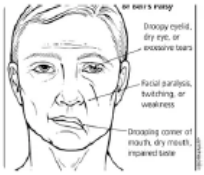
			stopped the movement that they match that position with the opposite limb 2. Passively flex or extend the joint 3. Maintain static position before asking the client to respond	
Touch and Proprioception	Stereognosis	• Tests cortical sensation • Haptic Perception - ability to use touch and proprioceptive information to accurately identify an object	1. Ask client to tell you what the object is that you place in their hand 2. Place ~ 5 objects (key, paper clip…) in their hand	**P:** DCML - Fasciculus Cuneatus **R:** Merkel's Discs
Temperature	Temperature Awareness	• Tests primary sensation • Can client accurately identify temperature differences • Map areas of impairments to determine whether sensory loss is a peripheral or dermatomal pattern	1. Prepare 2 sets of metal probe thermometers/test tubes (1 set "Hot [~115 °F]" and 1 set "Cold [~40 °F]") 2. Ask client to report temperature as "hot" or "cold" 3. Touch client with probe and maintain contact with the skin for ~3 seconds before asking for a response or moving probe	**P:** Anterolateral - Spinothalamic **R:** Thermoreceptors

Pain	Sharp/Dull	• Tests pain perception for protective sensation • Can client feel sensation equally and bilaterally?	1. Use safety pin or paperclip for "sharp" and "dull" sensations – do not puncture the skin 2. Tell client that you will touch their skin with the sharp and dull sides of the safety pin and to tell you if it is sharp or dull when they feel the touch 3. Vary the time between touches 4. Repeat over areas of suspected impairment	**P:** Lateral Pain System – Lateral Spinothalamic **R:** Nociceptors

Appendix B

Longitudinal fissure	separates cerebral hemispheres 
Central sulcus (fissure of Rolando)	Separates frontal lobe from parietal lobe 
Precentral gyrus	primary motor area 
Postcentral gyrus	primary sensory area 

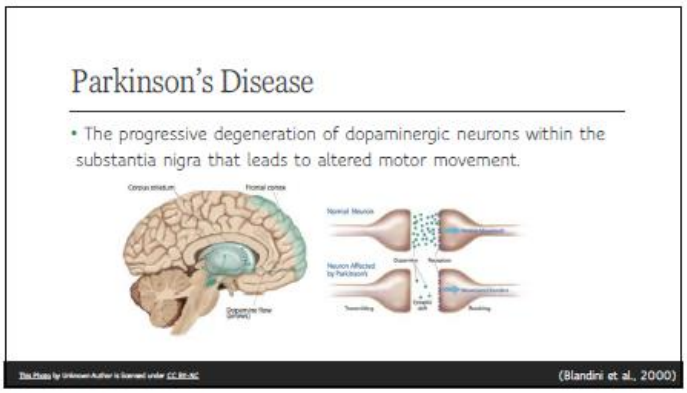
Thalamus function	relays and processes info - regulation of consciousness and attention 
Hypothalamus function	water balance/bp/temp regulation/hunger/thirst/sex. 
Epithalamus function	connected to limbic system (memory and emotions) and BG (motor coordination) - Pineal gland secretes melatonin (sleep/wake) 
Subthalamus function	Interacts with the basal ganglia to control movements. 

Bell's Palsy	Paralysis or paresis of the muscles of facial expression on one side of the face (ipsilaterally to lesion); is caused by a lesion of the facial nerve. 
Facial Nerve Motor Function	muscles of facial expression, eye closure and lip movement
Trigeminal Neuralgia	Trigeminal nerve dysfunction that produces severe, sharp, stabbing pain in the distribution of one or more branches of the trigeminal nerve. Pain is triggered by normally innocuous noxious, including eating, talking, or touching the face. The pain begins and ends abruptly, lasts less than 2 minutes, and is not associated with sensory loss. 

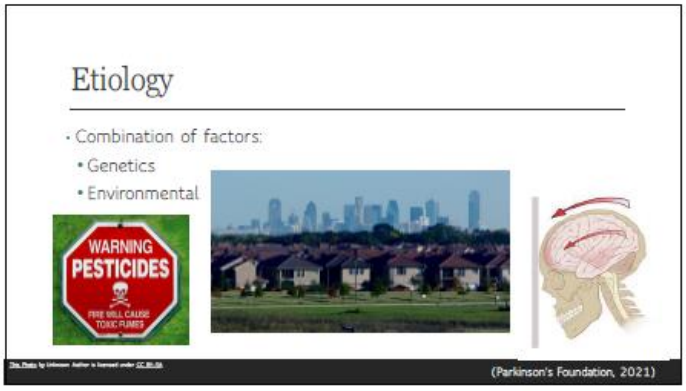
Basal Ganglia	"fine tunes" voluntary movements
Globus Pallidus Function	controls conscious and proprioceptive movements
Subthalamic Nucleus Function	suppresses unwanted movements
Substantia Nigra Function	produces dopamine which influences movement control, cognitive executive functions, and emotional limbic activity
Putamen Function	involved in learning and motor control, including speech articulation, and language functions, reward, cognitive functioning, and addiction
Erb's Palsy	a paralysis of the arm caused by injury to the upper group of the arm's main nerves, specifically the severing of the upper trunk C5-C6 nerves
Klumpke's paralysis	avulsion of the motor roots of C8 and T1

Appendix C

1



2



3

4

Signs and Symptoms

- T: Tremors
- R: Rigidity
- A: Akinesia and Bradykinesia (Masked Facial Expression)
- P: Postural Instability

Symptom of Parkinson's Disease

5

Overview

- LSVT stands for Lee Silverman Voice Treatment
- Based on individual's functional performance and client-centeredness
- All protocols are standardized and have been scientifically studied and validated
  - Research and other resources available at: https://blog.lsvtglobal.com/research/

(LSVT Global, 2021)

6

The LSVT Protocols

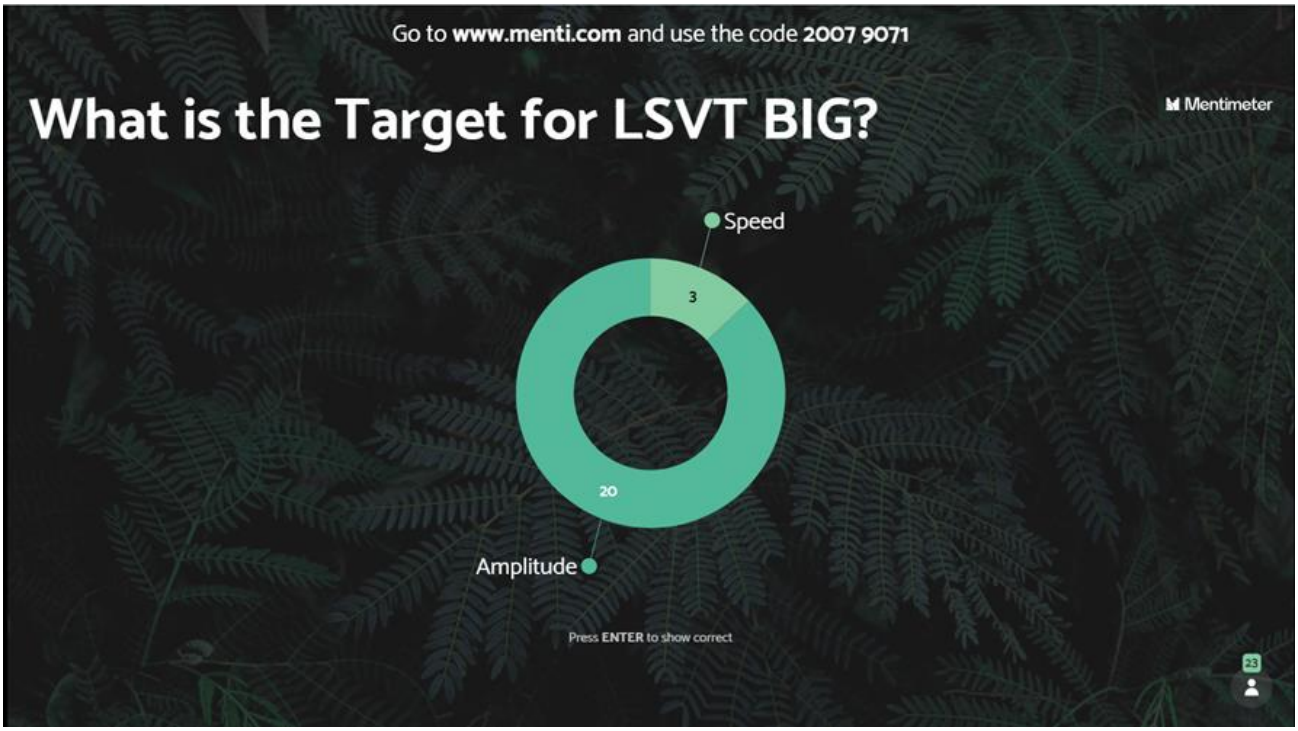
LSVT LOUD	LSVT BIG
Delivered by LSVT LOUD Certified Speech-Language Pathologists	Delivered by LSVT BIG Certified Physical Therapists or Occupational Therapists

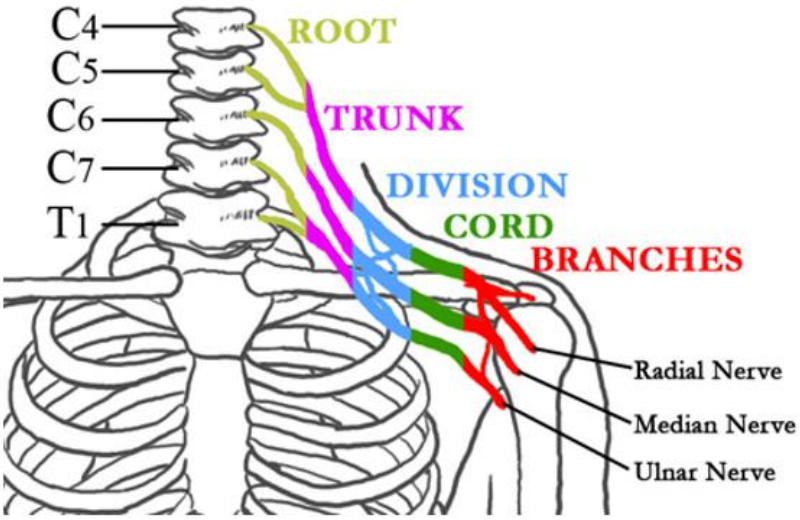
7

Fundamentals of LSVT BIG

1. TARGET:
   Bigness or AMPLITUDE
2. MODE:
   Intensive and High Effort
3. CALIBRATION:
   Solutions for Lasting Success

8



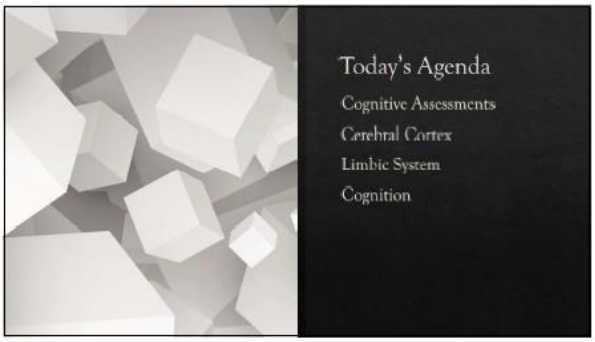


- **Demonstrate how to trace the Radial nerve** (draw on white board and then trace over with different color marker.
    - **Can ask the students to do on their own first and then show them how you traced it.**

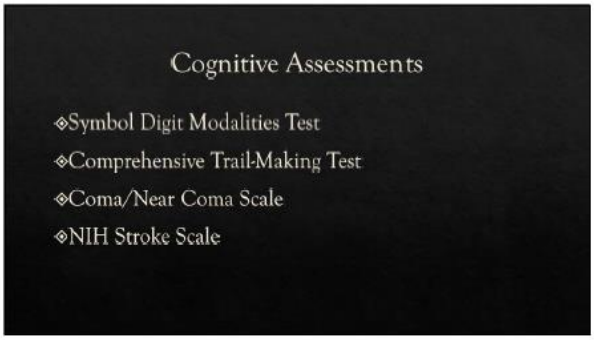
Class activity: Have students draw out their own brachial plexus and trace a different nerve (include which roots, trunks, divisions, cords & branches are involved. For example, for the radial nerve they would identify C5-T1 (roots); Superior/Middle/Inferior (Trunks); Posterior (Division); Radial (Branch).


Module 12 Lab Activities
Amanda Watkins, OTD/S

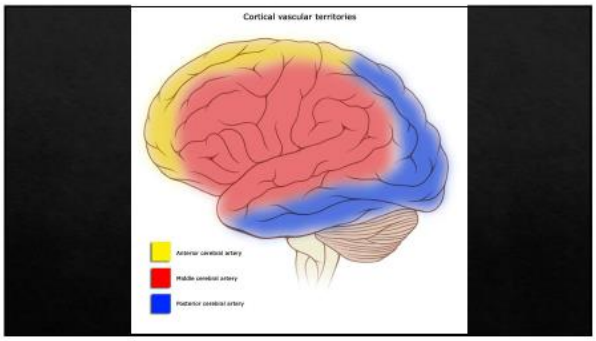
1


Today's Agenda
Cognitive Assessments
Cerebral Cortex
Limbic System
Cognition

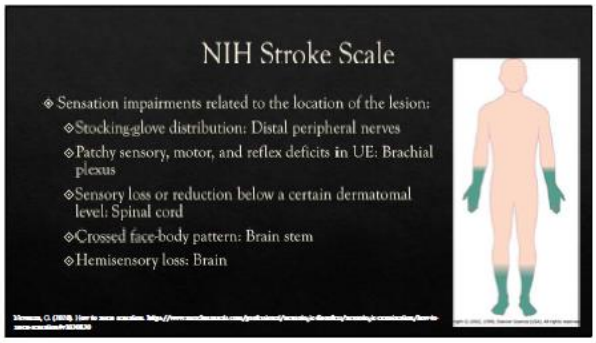
2


Cognitive Assessments
Symbol Digit Modalities Test
Comprehensive Trail-Making Test
Coma/Near Coma Scale
NIH Stroke Scale

3


Cortical vascular territories

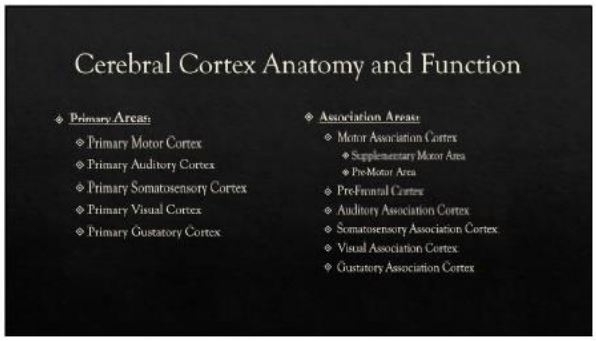
4


NIH Stroke Scale
Sensation impairments related to the location of the lesion:
Stocking-glove distribution: Distal peripheral nerves
Patchy sensory, motor, and reflex deficits in UE: Brachial plexus
Sensory loss or reduction below a certain dermatomal level: Spinal cord
Crossed face-body pattern: Brain stem
Hemisensory loss: Brain

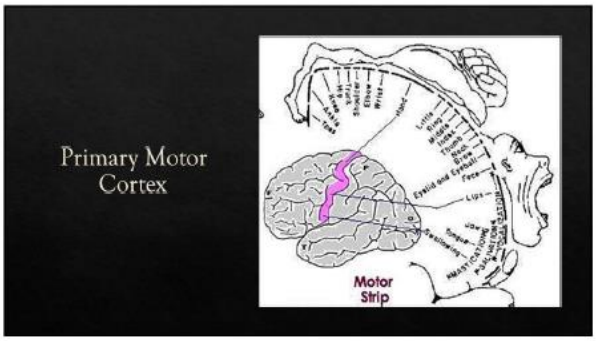
5


The Cerebral Cortex
Me : Sees dope meme
My brain:
Releases dope-a-meme

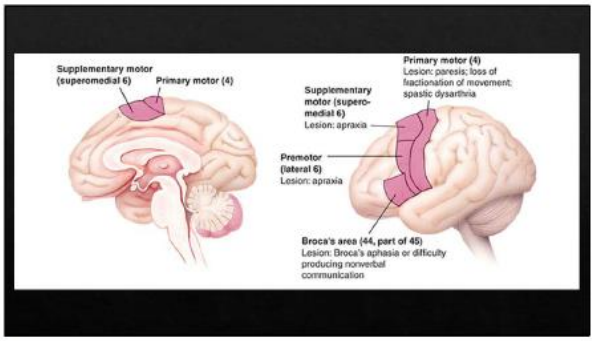
6


Cerebral Cortex Anatomy and Function
Primary Areas:
Primary Motor Cortex
Primary Auditory Cortex
Primary Somatosensory Cortex
Primary Visual Cortex
Primary Gustatory Cortex
Association Areas:
Motor Association Cortex
Supplementary Motor Area
Pre-Motor Area
Pre-Frontal Cortex
Auditory Association Cortex
Somatosensory Association Cortex
Visual Association Cortex
Gustatory Association Cortex

7


Primary Motor Cortex
Motor Strip

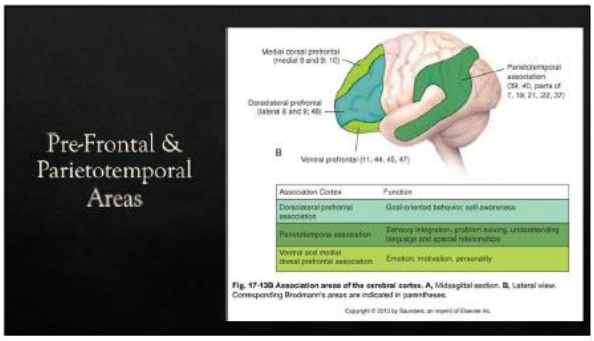
8


Supplementary motor (superomedial 6)
Primary motor (4)
Primary motor (4)
Lesion: paresis; loss of fractionation of movement; spastic dysarthria
Supplementary motor (supero-medial 6)
Lesion: apraxia
Premotor (lateral 6)
Lesion: apraxia
Broca's area (44, part of 45)
Lesion: Broca's aphasia or difficulty producing nonverbal communication

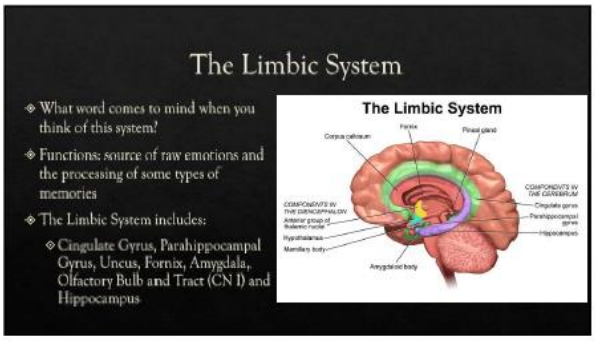
9


Who was
PHINEAS GAGE?

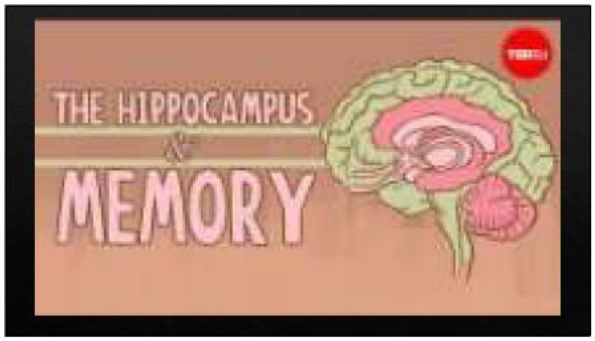
10


Pre-Frontal & Parietotemporal Areas
Medial dorsal prefrontal (medial 9 and 9; 10)
Dorsolateral prefrontal (lateral 8 and 9; 46)
Parietotemporal association (39, 40, parts of 7, 19, 21, 22, 37)
B
Ventral prefrontal (11, 44, 45, 47)
Association Cortex
Function
Dorsolateral prefrontal association
Goal-oriented behavior, self-awareness
Parietotemporal association
Sensory integration, problem solving, understanding language and spacial relationships
Ventral and medial dorsal prefrontal association
Emotion, motivation, personality
Fig. 17-13B Association areas of the cerebral cortex. A, Midsagittal section. B, Lateral view. Corresponding Brodmann's areas are indicated in parentheses.

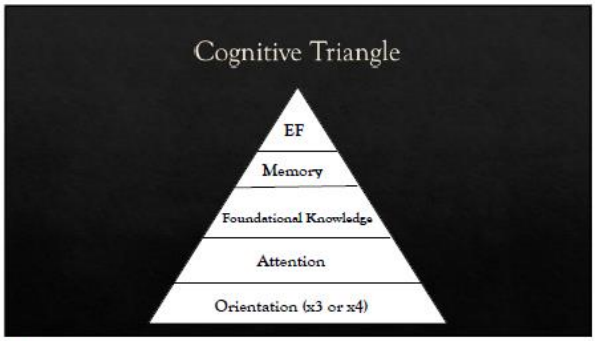
11


The Limbic System
What word comes to mind when you think of this system?
Functions: source of raw emotions and the processing of some types of memories
The Limbic System includes:
Cingulate Gyrus, Parahippocampal Gyrus, Uncus, Fornix, Amygdala, Olfactory Bulb and Tract (CN I) and Hippocampus
The Limbic System
Corpus callosum
Fornix
Pineal gland
Cingulate gyrus
Hippocampus
Hypothalamus
Mamillary body
Amygdaloid body

12

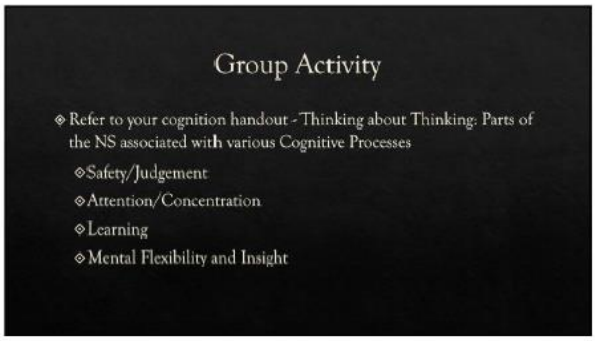

THE HIPPOCAMPUS
&
MEMORY

13

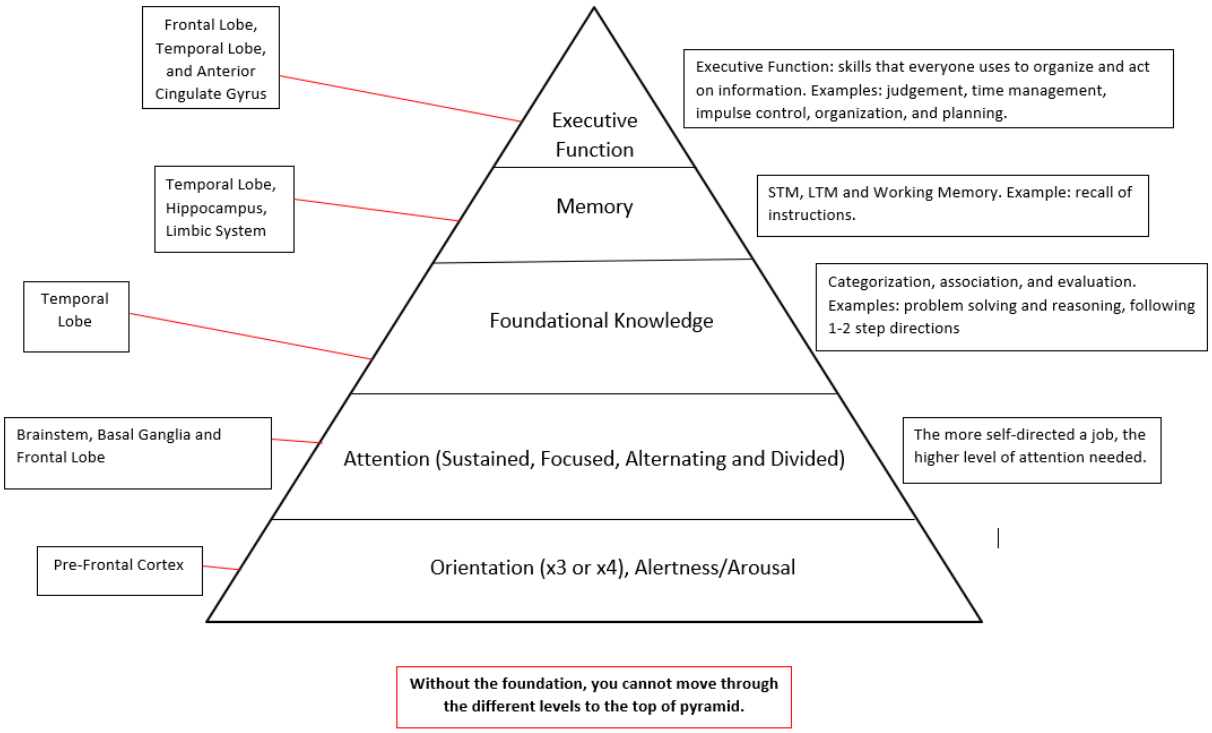

Cognitive Triangle
EF
Memory
Foundational Knowledge
Attention
Orientation (x3 or x4)

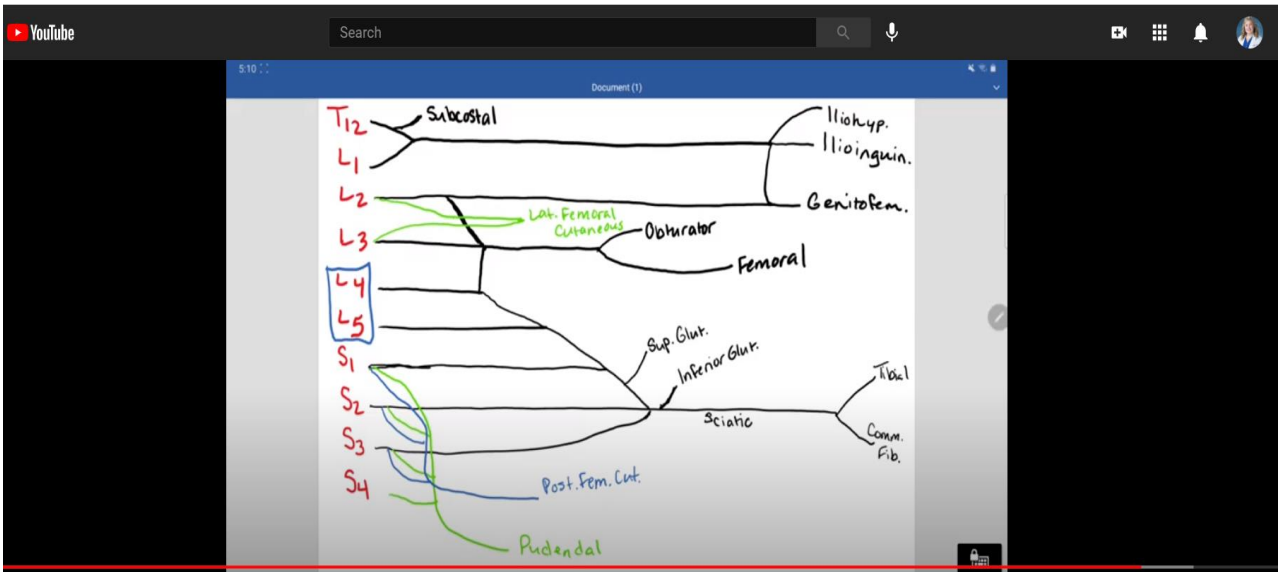
14

15


Group Activity
Refer to your cognition handout - Thinking about Thinking: Parts of the NS associated with various Cognitive Processes
Safety/Judgement
Attention/Concentration
Learning
Mental Flexibility and Insight

16


Frontal Lobe, Temporal Lobe, and Anterior Cingulate Gyrus
Executive Function
Executive Function: skills that everyone uses to organize and act on information. Examples: judgement, time management, impulse control, organization, and planning.
Temporal Lobe, Hippocampus, Limbic System
Memory
STM, LTM and Working Memory. Example: recall of instructions.
Temporal Lobe
Foundational Knowledge
Categorization, association, and evaluation. Examples: problem solving and reasoning, following 1-2 step directions
Brainstem, Basal Ganglia and Frontal Lobe
Attention (Sustained, Focused, Alternating and Divided)
The more self-directed a job, the higher level of attention needed.
Pre-Frontal Cortex
Orientation (x3 or x4), Alertness/Arousal
Without the foundation, you cannot move through the different levels to the top of pyramid.


YouTube
Search
5:10
Document (1)
T12
L1
L2
L3
L4
L5
S1
S2
S3
S4
Subcostal
Iliohyp.
Ilioinguin.
Genitofem.
Lat. Femoral Cutaneous
Obturator
Femoral
Sup. Glut.
Inferior Glut.
Tibial
Sciatic
Comm. Fib.
Post. Fem. Cut.
Pudendal

Appendix D

BRENAU UNIVERSITY

SCHOOL OF OCCUPATIONAL THERAPY

COURSE: OT 839 Neuroscience: Implications for Performance Skills

Assignment: Case Study Assignment **Total points: 100**

Assignment due date: 4/11/2021

Instructions: Please select a case study under the Collaboration link in Canvas, on which to base your assignment. The case studies presented consist of notable individuals including 2 actors, an actress, a singer-songwriter, and a race car driver. Each one of these individuals has either sustained a neurological injury or suffers from a chronic neurological condition. These individuals do not reflect every person with their neurological condition, but will give you an idea of the types of issues they may deal with. If you would like to write your paper on an individual or diagnosis not listed, please contact the instructor for preapproval.

Case studies:

- Traumatic Brain Injury - Bobby Allison
    - https://workingonmyredneck.com/index.php/2012/10/14/closed-brain-injury-concussions-the-subtle-incapacitator/
- Stroke - Kirk Douglas
    - https://www.nbcnews.com/news/us-news/kirk-douglas-became-unlikely-spokesman-stroke-awareness-n1131221
- Multiple sclerosis - Selma Blair
    - https://www.forbes.com/sites/brucelee/2019/02/27/selma-blair-why-her-multiple-sclerosis-diagnosis-was-delayed/?sh=6ba792632557
- Complex Regional Pain Syndrome - Paula Abdul

    - https://www.painpathways.org/straight-up/
- Parkinson's disease – Michael J. Fox
    - https://www.michaeljfox.org/michaels-story

Format:

- This assignment should be written in Times New Roman 12-point font and all headings, citations and references should be in APA 7 format. A cover page, running head, and a reference page should be included. Do not include assignment directions in your paper.
- There are two parts to this assignment, each worth 50 points including quality of writing. Part I should be double spaced, the Table in Part II does not need to be double spaced. Paper length: ~ 5-10 pages.
- Sources for this assignment should include your textbook and at least one article from a recent (within the last 5-10 years) OT peer reviewed journal. Acceptable online references include websites that are .org, .edu or .gov. References that are .com are discouraged, and Wikipedia as a source is not acceptable. However, students may use a .com website source when compiling occupational profile information on their selected individual. When using your Lundy-Ekman textbook, the specific chapter where you found your information should be referenced (see Section 9.28 of APA manual).
- If a section below is not relevant to your client's diagnosis, do not leave it blank. State why it is not relevant. For example, neurotransmitters are not associated with carpal tunnel syndrome, as that condition is a peripheral nerve disorder that develops from compression of the median nerve, or something to that effect…

Content:

Part I – Case Study

Background information (6 points)

- Formulate a brief occupational profile based on your case study individual.
- Include the signs and symptoms of the person in your case study, relevant contextual factors, and any tests or treatments they may have undergone.

General description of the neurological condition (8 points)

- Summarize the medical condition specific to your selected case study.
- Include the typical signs and symptoms of this medical condition.
- Discuss the incidence, prevalence, and prognosis for a client with this condition.

Structures involved (9 points)

- List all the structures and systems that are involved in this condition.
- Is this condition related to the CNS, PNS and/or ANS?
- Does this condition affect upper motor neurons (UMN), lower motor neurons (LMN), or neither? Include rationale.
- State whether both sides or one side of the brain or body are affected. Are the effects contralateral, ipsilateral, or bilateral?
- List the neurotransmitters, if any, that may be involved. What is their effect and why?
- List the sensory and/or motor tracts that are involved, with rationale.
- If there is a lesion, what is the location or level of the lesion?
- What dermatomes & myotomes may be involved?

Neurological examination (9 points)

- List at least 4 areas that should be assessed (e.g., sensation, cranial nerves, tone, muscle strength, range of motion, coordination, cognition, balance), and at least 1 assessment for

each area identified. Must discuss why the particular assessment was selected or is appropriate for this particular client or this neurological condition.

- If cranial nerves are involved list them, as well as how their function would be assessed.

Occupational Therapy Intervention (7 points)

- Types of OT interventions: Identify at least two types of interventions from the *Occupational Therapy Practice Framework: Domain and Process Fourth Edition* (OTPF) found in Table 12 that would be the most beneficial for your client. Provide example for each selected choice.
- Approaches to intervention: Identify most appropriate OT intervention approach from the *Occupational Therapy Practice Framework: Domain and Process Fourth Edition* (Table 13) based on the client's desired outcomes - e.g., create/promote, establish/restore, prevent, modify/adapt, maintain etc. Discuss rationale for selected choice.

Reflection (8 points)

- What are the implications for performance skills for someone with this neurological condition? What functions do you think were affected for the individual in this case study?
- Describe what you have discovered from this assignment about the human aspect of recovery from different neurological conditions, and what you can apply to your eventual practice.

Part II – Diagnosis Chart

Complete the Part II Disease Chart for your selected neurological condition. Be thorough but concise when completing this chart. You may include hyperlinks and any additional information

that you think may be useful in your understanding of the selected condition. Do not leave any sections blank. If a heading is not applicable to the selected diagnosis, then write N/A or provide a brief description of why it is not relevant.

Chart sections – (each section is worth 5 points)

- Subtypes and Clinical Presentation - If applicable, include information of different subtypes of the condition and related symptomatology.
- Recovery Timelines - Notate applicable recovery timelines. Is the condition terminal? Is there a cure? Are there any medical or surgical management options?
- UMN Involvement, causes, location.
- LMN Involvement, causes, location.
- Somatosensory Deficits.
- Cognitive Deficits.
- Neuromuscular Deficits.
- Diagnostic Tests Performed i.e., EMG, CT, MRI, fMRI - List related imaging results or other diagnostic tests that are used to identify the disease and/or disease severity.
- Clinical Tests Performed - List relevant neurological assessments and cranial nerve testing.
- OT Intervention Approaches - Add the types of intervention and intervention approaches that you identified in your paper with a brief description.

*I will select the best of each diagnosis chart or compile the best aspects into one chart, and upload to Canvas as a resource for the class.

Grading Rubric Case Study Assignment	
Criteria	**Points**
Part I – Case Study	
Background information: an occupational profile, relevant contextual factors, and any tests or treatments mentioned in the individual's biographical information are included.	/6
General description of the neurological condition: summary of medical condition, signs, symptoms, incidence, prevalence, and prognosis of the neurological condition.	/8
Structures involved: comprehensive description of all structures and systems including the division of the nervous system, location in brain and body that are affected, and if relevant location or level of lesion, UMNs, LMNs, any neurotransmitters, dermatomes, myotomes, sensory and/or motor tract involvement. Rationale must be included for each.	/9
Neurological examination: includes at least 4 areas that should be assessed, with at least 1 assessment for <u>each</u> identified area. Include rationale for why assessments selected are appropriate. If cranial nerves are involved, list them along with how their function would be assessed.	/9
Occupational therapy intervention: includes at least 2 types of interventions appropriate for this client or for this neurological condition, with an example of each listed. Also includes listing of most appropriate OTPF OT intervention approach, including rationale for selection.	/7
Reflection: demonstrates understanding of functional implications of selected neurological condition. Self reflects on what learned about selected neurological condition, and potential influence on future practice.	/8
Writing (organization, grammar, spelling): coherent organization of paper, grammar and spelling, APA 7th formatting for paper including reference list. Times New Roman 12-point font.	/3
Part II – Diagnosis Chart	
Subtypes and Clinical Presentation: If applicable, includes information of different subtypes of the condition and related symptomatology.	/5

Recovery Timelines: Notates applicable recovery timelines. Is the condition terminal? Is there a cure? Are there any medical or surgical management options?	/5
UMN Involvement, causes, location: includes information about muscle strength and tone, and any reflexes present or absent.	/5
LMN Involvement, causes, location: includes information about muscle strength and tone, and any reflexes present or absent.	/5
Somatosensory Deficits: includes deficits related to the conscious perception of touch, pressure, pain, temperature, position, movement, and vibration.	/5
Cognitive Deficits: includes the mental processes (e.g., attention, memory, language etc.) that are inhibited or impaired.	/5
Neuromuscular Deficits: includes all deficits related to movement and motor control.	/5
Diagnostic Tests Performed i.e., EMG, CT, MRI, fMRI: includes list of related neuroimaging or other diagnostic tests that are used to identify the disease and/or disease severity.	/5
Clinical Tests Performed: includes list of relevant neurological assessments and cranial nerve testing.	/5
OT Intervention Approaches: includes the types of intervention and intervention approaches that were identified in your paper with a brief description.	/5
Total	/100

Disease Matrix Sample	**Subtypes and Clinical Presentation**	**Recovery Timelines**	**UMN Involvement, causes, location?**	**LMN Involvement, causes, location?**	**Somatosensory Deficits**
	Cognitive Deficits	**Neuromuscular Deficits**	**Diagnostic Tests Performed i.e., EMG, CT, MRI, fMRI**	**Clinical Tests Performed**	**OT Intervention Approaches**

Appendix E

Virtual Learning Toolkit

VIRTUAL LEARNING TOOLKIT

Amanda Watkins

Contents

Section 1: Introduction to Virtual Learning Toolkit

Hello! My name is Amanda Watkins, and I am a student at Nova Southeastern University in the Entry-level Doctor of Occupational Therapy Program. I made this virtual learning toolkit as a component of my Doctoral Capstone Experience for the Winter 2021 semester. During my time as a student, I experienced my education in a hybrid learning format with a good majority of my education disseminated through virtual formats. I wanted to create a resource for other occupational therapy programs to refer to as technology evolves and the need to integrate learning through different platforms is growing. In this toolkit, I have included various free web-based programs and how they can be integrated into different courses. There are a couple "how to" videos incorporated for different programs that I created to give an easy option to follow along and learn how to use the programs as a beginner. I also discuss a framework that is another great resource to utilize if the needs or desires of the program shift to a hybrid-blended learning model. During this capstone experience, I have tested and incorporated the items that I have mentioned in this toolkit and I give descriptions of my experience from this. I hope that this is a handy reference to use as a starting point for different ideas and creative transitions for your course(s).

If you have any questions, my email is listed below!

Amanda Watkins

Email: awatkinsotd@gmail.com

Section 2: Community of Inquiry Framework and Blended Learning

- **The Community of Inquiry (COI) Framework**
    - The COI Framework was created by Dr. Randy Garrison and it includes several constructs that instructors can use to convey information to their students in the physical and virtual learning environments.
    - The following image is a visual model of the constructs in the COI Framework and how they integrate with one another.

- **The Importance of Using a Blended Learning Approach**
    - As universities continue to integrate the use of technology for instruction and assignments into their courses, the need for creating a versatile blended learning environment also increases. Blended learning is the combination of on ground and online instruction to enhance learning and optimize efficiency for professors (Garrison, 2007). Dr. Randy Garrison noted that by using the blended learning approach, students' independent learning, collaborative learning and self-paced

learning was enhanced and communication between students and professors increased.

  - Universities can incorporate blended learning strategies by using their existing learning management systems (LMS) in combination with other virtual learning tools.

- **References**

  - Garrison, D. R. (2007, October). *Strategic conversations about blended learning: Transforming higher education*. [Conference session]. COHERE/CHERD Conference, York University, Toronto, Canada. http://cde.athabascau.ca/coi_site/presentations/COHERE_CHERD_BL_Conference2.pdf
  - Community of Inquiry Website: https://coi.athabascau.ca/coi-model/

Section 3: Classroom Assessment Techniques

- **Background**
    - Angelo and Cross (1993) stated, "teaching without learning is just talking" and this is an important statement to remember when creating a learning environment, preparing materials, and engaging with students. The authors of *Classroom Assessment Techniques: A Handbook for College Teachers*, provide a battery of classroom assessment techniques, which are tools to measure student learning, for faculty to efficiently promote and empower their students' clinical skills. Classroom assessment techniques (CATs) allow faculty to create a symbiotic relationship between course materials and the cultivation of students into professionals (Adams & Hale, 2020). Unfortunately, there is not a significant amount of education literature about the use of CATs in occupational therapy programs, but there is a variety of research that has been conducted by other allied healthcare disciplines that is beneficial for OT educators.
- **Definition**
    - CATs are methods of collecting feedback from students throughout a course, so that the instructor can understand how students learn and respond to different teaching strategies.
    - From the information that is collected after implementing a CAT, the instructor can shift their teaching approach, if needed, to increase effectiveness and efficiency of student learning.

- **Accessibility**
    - This resource is available through the Brenau University library system, and they have 3 copies for loan. It can also be purchased through Amazon for approximately $10.00 (used condition) based on your preference.
- **Teaching Goals Inventory (TGI)**
    - This self-scorable questionnaire can be useful in identifying specific goals that the instructor has for the course and the level of importance of each goal is then ranked.
    - Goals are then grouped as clusters:
        - I - Higher-Order Thinking Skills
        - II - Basic Academic Success Skills
        - III - Discipline-Specific Knowledge and Skills
        - IV - Liberal Arts and Academic Values
        - V - Work and Career Preparation
        - VI - Personal Development
    - In *Classroom Assessment Techniques: A Handbook for College Teachers,* the second half of the book is based on the specific goal clusters identified from the TGI.
    - The Teaching Goals Inventory can be found on pages 20-23 and is also included at the end of this section.
- **Estimated Time Requirement for Implementation**
    - For each CAT, the book lists the time requirement for faculty preparation, student response time, and analysis by faculty.

- This information is helpful and important when planning and selecting which CAT(s) you will implement for your course-specific goals.

- **Course Implementation Example**
  - I tested 2 specific CATs in a presentation that I did on the LSVT BIG program related to the information presented on the basal ganglia and associated conditions. The total time that it took me for preparing, carrying out and analyzing the response took approximately 1.5 hours, as a reference for this example.
  - Before I did the presentation and implemented the CATs, I followed the protocol for writing a course-specific goal.
    - *To help students improve their knowledge of an effective, evidence-based treatment program for Parkinson's Disease.*
  - After I identified and created the course-specific goal, I created a purpose statement.
    - *I (the presenter) aim to help improve the ability to learn concepts and theories related to neuroscience for the ELOTD students' future clinical fieldwork placements and careers by explicitly teaching an evidence-based treatment protocol because I believe that knowledge of different treatment options is critical to successful occupational therapy performance.*
  - Classroom Assessment Technique 24 and 41
    - Based on my purpose statement, I used a combination of Application Cards and Chain Notes and implemented these at the end of the presentation.
    - I gave each student a small sheet of paper and asked them to respond to the following:

        - *Are you interested in using this treatment protocol in the future? Yes or No and Why?*
        - *Any feedback on presentation or any of its components?*
    - From the students' responses, I found that they enjoyed the interactive components of the way that I presented and that I presented in a manner that they understood. I also received a great amount of feedback to the first question about whether they would use this protocol, but also why they would or would not use it.
        - Student Response "*Yes because you see improvements with clients. It can be applied to various conditions as well. One-on-one can allow this to be incorporated in their daily activities (client-centered).*"

- **References**

    - Adams, D., & Hale, E. (2020, August 26). *Stop giving them answers: make them think*. Faculty Focus. https://www.facultyfocus.com/articles/effective-teaching-strategies/stop-giving-them-answers-make-them-think/
    - Angelo, T. A., & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). Jossey-Bass.
    - Teaching Goals Inventory: http://www.tusculum.edu/adult/learning/docs/TeachingGoalsInventory.pdf

Section 4: Using YouTube for Assignments

- **Background**
    - There are a variety of uses for YouTube. It can be used within the classroom in addition to learning and practice of clinical skills outside of the classroom. Videos on this platform are very easy to integrate within a PowerPoint or Google Slides to then submit on Canvas LMS as a full assignment. Links to videos can also be pasted into a word document and then submitted in the same form.
    - You can have your students create demonstration videos for different skills that they have learned in the classroom and this method can be used as a way to assess competency of skills and potential points that need to be addressed before a practical exam.
    - Time limits can be included in this assignment very easily to reduce the time for grading and making comments. Videos should be succinct, and the student should be able to demonstrate skills in a concise manner.
- **Examples of Assignments**
    - Demonstration of cranial nerve assessment
    - Demonstration of range of motion
    - Demonstration of manual muscle testing
    - Demonstration of a standardized assessment and interpretation of results
    - Interventions – pediatrics / physical disabilities
        - For videos involving minors, a video release form should be filled out by the parent/guardian and submitted with the assignment. A new release should be completed for each individual video. This also is an additional

opportunity for students to address the client's privacy and they can explain that the video will be privately linked so it is only available for viewing by the student who recorded it and the professor of the course.

- **General Structure of a Video**
    - *Formal introduction*
        - A student can give their formal introduction, as they would give to a client. By practicing a concise introduction, students can prepare themselves for this task during their fieldwork rotations and any interactions that they have with clients.
        - Student includes name, school and program, verbalization of what OT is, asks how client would like to be addressed, visual demonstration or verbal acknowledgement of hand hygiene and cleanliness of all equipment that will be used, addressing level of pain, addressing concerns of the client, and answering any questions they may have.
    - *Explanation of Purpose of Test or Movement*
        - This portion creates another opportunity to practice giving an explanation to a client. This will allow the student to prepare for similar tasks or scenarios during fieldwork and interaction with clients.
        - Student describes purpose of test in terms for a client to understand, explains any equipment that will be used (e.g., goniometer or hand placement) and address concerns of the client and answering any questions they may have.
    - *Demonstration of Skill*

        - This portion will encompass the actual performance of the skill that the assignment entails.
        - Student includes explanation of any movements or positioning, a demonstration of test on client (if applicable), and clear directions are given to client.
    - *Interpretation of Results*
        - In this section of the video, the student will demonstrate their ability to describe to their client any findings from the tests/skills/assessments that they just performed.
        - Student includes explanation of findings from all tests that were performed in terms for a client to understand, and address concerns of the client and answering any questions they may have.

- **How To**
    - In this short video I demonstrate the process for uploading a video to YouTube. I go through the steps to ensure that the video is marked as "unlisted" so that the video link can be shared with specific individuals instead of a publicly marked video.
    - Instructional video for uploading process: https://youtu.be/kQDg6_Z7ddY
- **Benefits**
    - There are various uses and benefits for incorporating student demonstration videos within your course as assignments. These can be used to reinforce concepts that were taught in lab meeting times, classroom lectures or from readings.

- This can be a fantastic resource for the student as they will have videos of themselves performing different skills that they can reference in future fieldworks or as a new graduate in clinical practice.

Picture and Videography Release

I hereby give the unqualified right to Brenau University to take pictures and/or recordings of me and to put the finished pictures/recordings to any legitimate use without limitation or reservation.

Signature: _____

Name Printed*: _____

Address: _____

City: _____ State: _____ Zip: _____

Project: _____

Coordinator: _____

Date: _____

**If subject is a minor under laws of state where photography/videography is performed:*

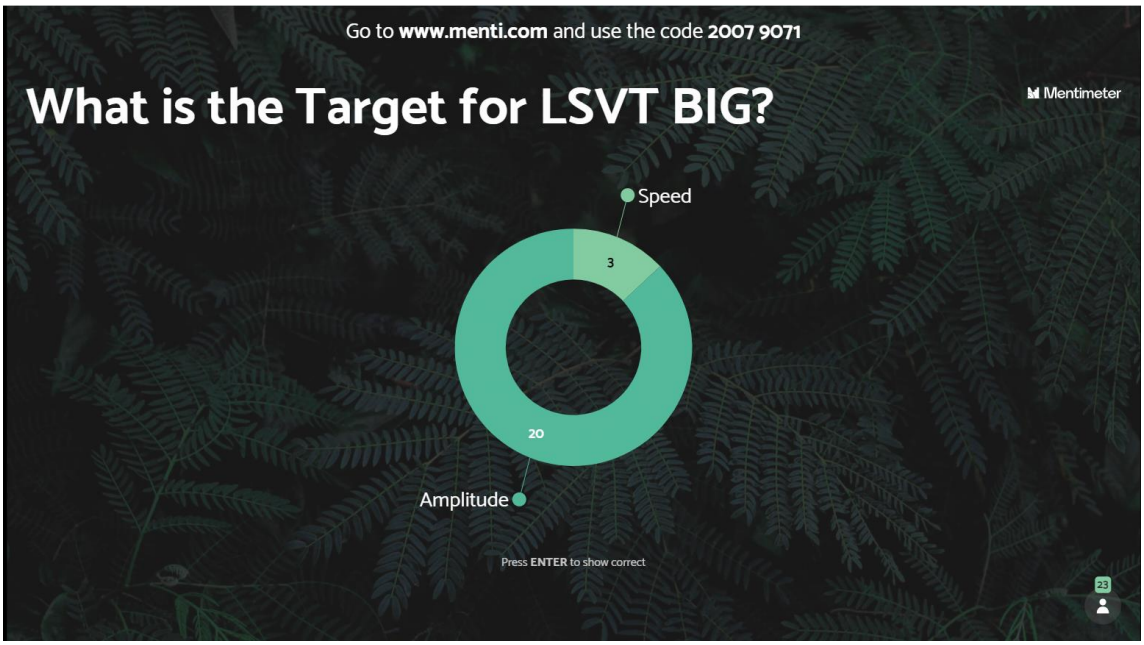
Guardian Signature: _____

Guardian Name: _____

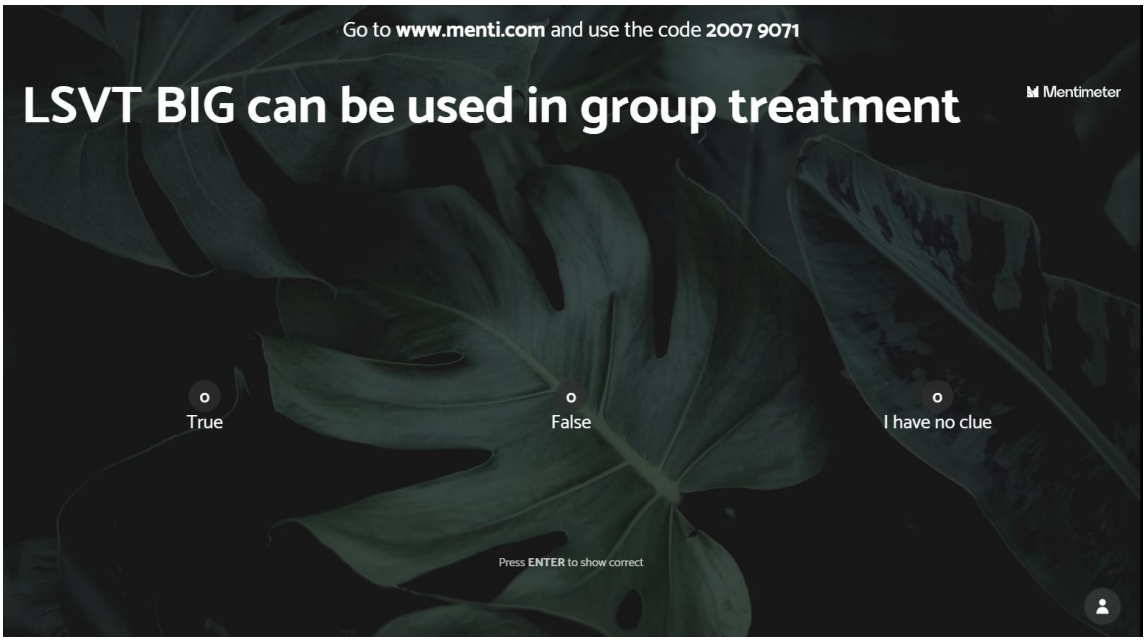
Street: _____ City: _____ State: ___ Zip: _____

Section 5: Free Web Resources

- **Background**
    - There are a variety of website resources that can be useful for your presentations, class announcements and a study resource for students. Blending technology within your existing course material can be relatively easy and increase student engagement in your course. Cultivating and maintaining student engagement during lectures or lab classes will help solidify complex topics and promote the students' understanding of material. In this section, I have listed and linked to useful web resources that I have tested and used throughout this semester that you can integrate into your course(s).
- **Interactive Presentations - *Mentimeter***
    - Mentimeter is a free, online software that can be used for polling, quizzes, and free response questions from your students. You can implement this software into PowerPoint or use it directly from the web. PowerPoint has an extension that you can download for this program and then directly embed it into the presentation, like you would a YouTube video for instance. I recommend utilizing this function from the web in a separate window because it works better to view live updates as the students respond to the questions.
- **How to Use Mentimeter Video** https://youtu.be/yeGCo7QI-wc
    - *Live Polling*
        - You can use the live polling option to incorporate multiple choice questions in a presentation. By using this method, you are able to get fast responses from your students in addition to different visualizations in real-time.



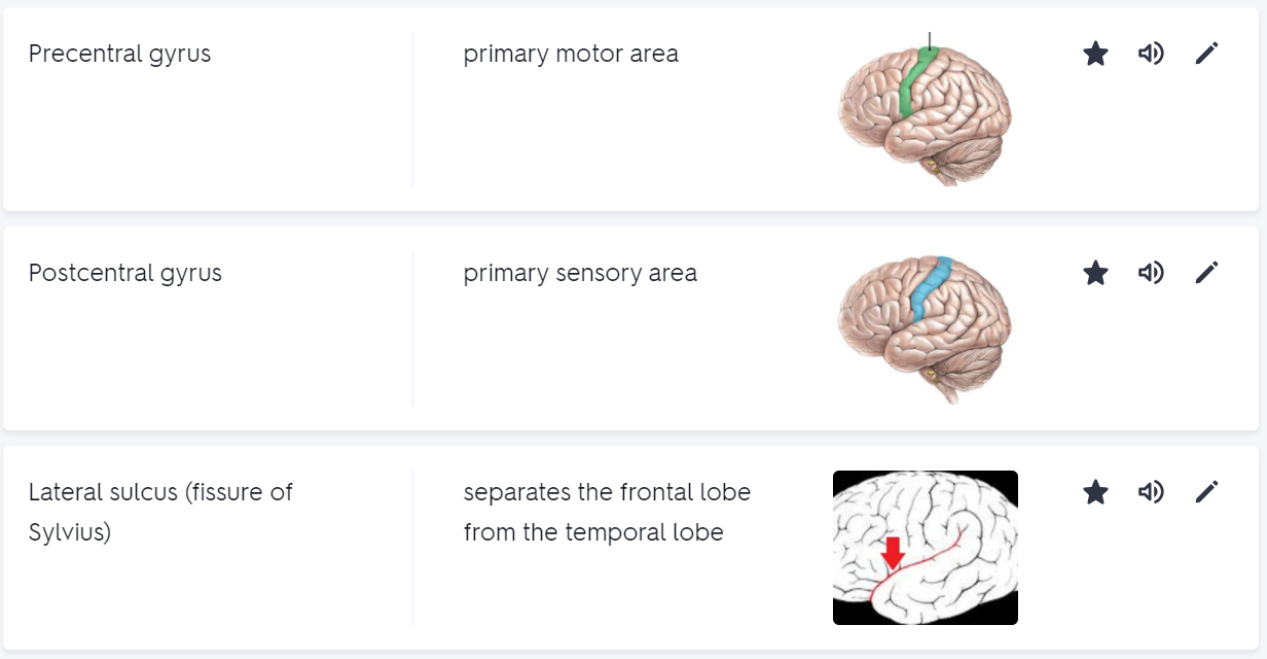
- *Word Clouds*
  - Word Clouds are a great way to promote creative responses about a specific topic. In this feature of the program, words are grouped in different formations and the most popular words that are submitted by your audience are enlarged. Use this function to show this type of free-response answers in an engaging way to make a point and allow for a cohesive presentation for students and speaker.
- *Multiple Choice Quizzes*
  - This is a great option for any lecture on course content and can be integrated at any point in your lecture (mid-lecture or at the end). I tested/utilized this particular function in a presentation, and I created a few multiple-choice questions at the end of the presentation to gauge how well students paid attention to the content.



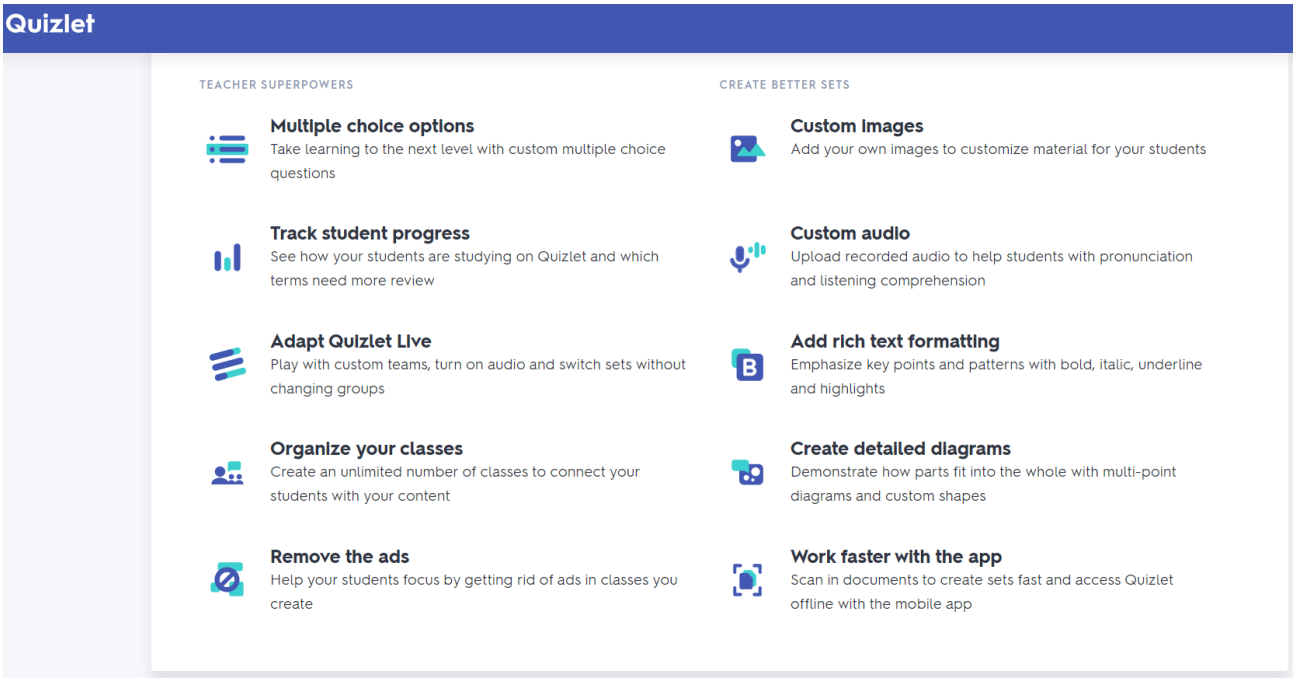
- *Fun Quizzes*
  - This creates a fun competition-based quiz that your students can engage with and you can view the results in real time. Interactive quizzes are a great way to keep the focus of students and can be a tool for memorization of concepts that you include during your class time.

- **Studying - *Quizlet***
  - Quizlet is a free, online study tool that has different options for studying material such as games and flashcards. Because it is a web-based program, it tracks progress and allows the student to mark specific "cards" that they can continue to review if needed. Creating a Quizlet set does take time to complete, but the features of this program make the process easier. My experience with making Quizlet sets for exams took about 1-2 hours for each set.
  - To learn more about a free Quizlet Teacher account: For Teachers | Quizlet

- You can create a free Quizlet Teacher account. This type of account gives you access to add pictures to the cards in your set (see picture below).



- The upgraded Quizlet Teacher account costs $47.88 per year and includes the following enhanced features from the free account.

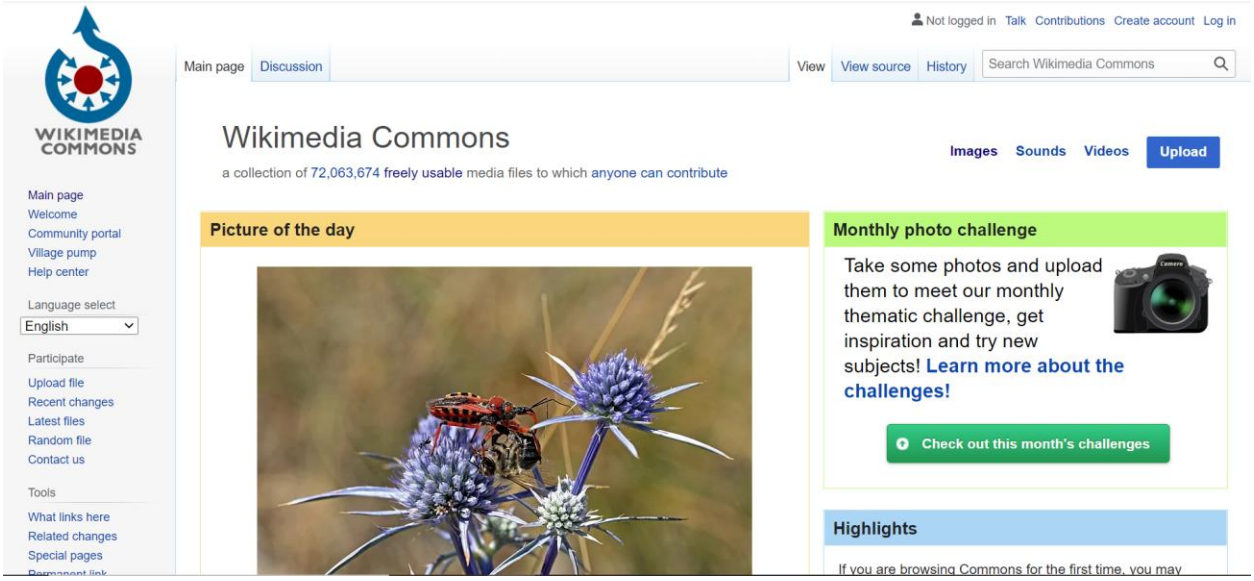


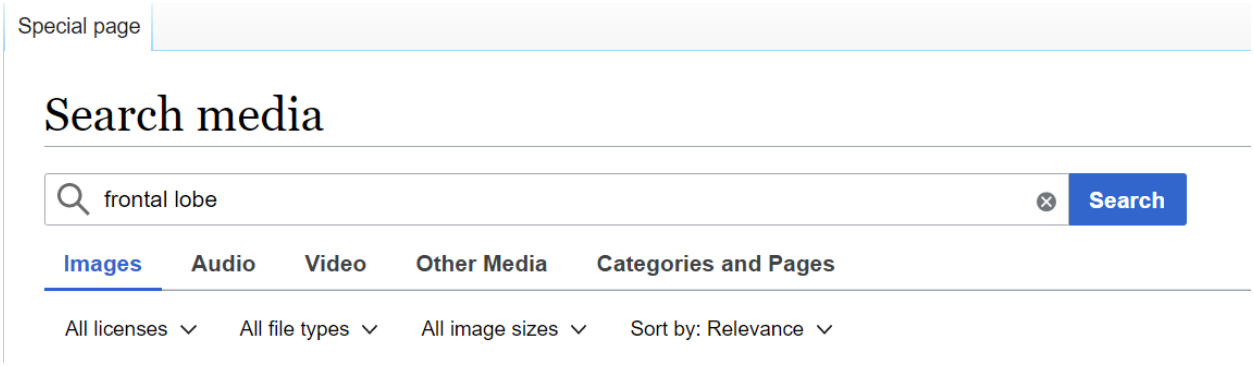
- **Class Announcements - *Biteable***
    - Biteable is a free online software that can be used to create very short videos from a variety of templates that are available through this site. I think that this could be a great addition to make a short announcement or to send a reminder to students, instead of posting a written announcement on Canvas. You can also make a video to clarify a specific point or address multiple questions that you have received in one method to easily send to all of your students at one time.
    - I used this software to create a sample course announcement and it took me less than 5 minutes to browse through the available templates and then edit the template with what I wanted my announcement to say. I also want to note that the free version of this software is very expansive, and I see no need to upgrade to the paid account for this purpose.
    - To view an example of a course announcement: https://biteable.com/watch/new-procedure-copy-2886840/2c85bd533f9a3322742176e43621611c

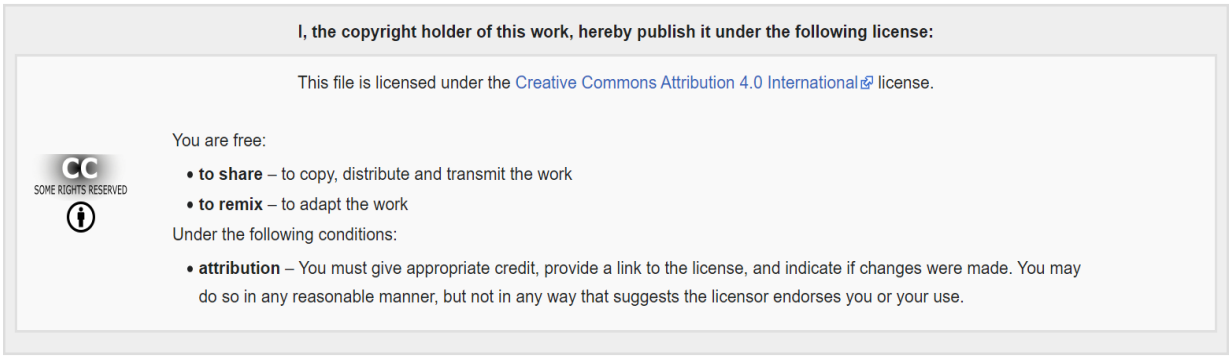
Section 6: Royalty Free Media Usage

- **Background:** There are a variety of websites where free images can be found, however, it is important to recognize that these images may not be as "free" as they seem. Selecting images from websites and platforms that offer images that are royalty-free allow you to use the images without any worry of copyright infringement issues. Below I have included several websites that I think offer the most diversity in images that can meet your specific needs for use.
- **Unsplash:** https://unsplash.com/
    - This free image website would be good to use if you need to add some additional images to a presentation. The site itself is very easy to use, when you click on the link, there is a search bar on the main page. Just simply search for an image that you want, scroll through the options that generate, click on a specific image, and select the green "Download Free" button at top right-hand corner. This will allow you to save the image to your computer for use.
    - You do not need to create an account. This website allows you to download images without an account and without copyright issues.
- **Wikimedia Commons:** https://commons.wikimedia.org/wiki/Main_Page
    - This website is the best for anatomically correct photos and other useful imaging videos that can be incorporated into a presentation. After you search for your image, you can also filter results to find other media like videos. See example of home page search options below.
    - When you select your image or video, you will need to scroll down to verify what the author for the image/video requires you to cite when using the media. Usually

this only pertains to a situation where you are planning to change the author's original work in some way. See below for an example of image attribution.







- **Creative Commons:** https://search.creativecommons.org/
    - This is another website where you can search for royalty free images. This site only offers images, and you can select what type of images you want to be shown in your search. See an example below of the home page and the selection choices.